

AMENDMENTS TO THE CLAIMS

20. (Currently amended) A microdisplay pixel cell
5 device, the device comprising:

a semiconductor substrate defined with a plurality of
active areas;

at least one gate, the gate covering a portion
of the active area;

10 at least one source/ and at least one drain(S/D),
the source/ and the drain being in the active area not
covered by the gate;

a first dielectric layer, the first dielectric layer
covering the gate and the source/ and the drain, the
15 first dielectric layer comprising at least one row
select contact plug to electrically connect to the
gate;

at least one row select line, the row select line
being atop the first dielectric layer, the row select
20 line being electrically connected to the gate through
the row select contact plug;

a second dielectric layer, the second dielectric
layer being atop the first dielectric layer and
covering the row select line;

25 at least one pixel cap top plate, the pixel cap top
plate being atop the second dielectric layer;

at least one first contact plug, the first contact
plug being in the first dielectric layer and the second
dielectric layer for electrically connecting the
30 source and the top plate;

at least one capacitor dielectric layer, the
capacitor dielectric layer being atop the surface of

the top plate; and

at least one pixel cap bottom plate, the pixel cap bottom plate being atop the second dielectric layer and covering the top plate and the capacitor dielectric layer.

21. (Original) The device of claim 20 wherein the gate comprises a gate oxide layer, a polysilicon layer or a metal silicide layer.

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22. (cancelled)

23. (Original) The device of claim 20 wherein at least one second contact plug is comprised in the first dielectric layer and the second dielectric layer for electrically connecting the drain to a video data line.

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24. (Original) The device of claim 20 wherein the row select line is composed of a metal and is used as a scan line of the microdisplay.

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25. (Original) The device of claim 20 wherein both the bottom plate and the top plate are composed of a metal.

25 26. (Original) The device of claim 25 wherein both the bottom plate and the top plate are composed of titanium (Ti), titanium nitride (TiN), aluminum (Al), copper (Cu) or an alloy of above-mentioned materials.

30 27. (Original) The device of claim 20 wherein the pixel cell comprises two gates, two common drains, four sources, four top plates and one bottom plate stacking

in sequence from bottom to top.

28. (Original) The device of claim 20 wherein the
microdisplay is a reflective liquid crystal on silicon
5 (LCOS) display.